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with bright, well defined streaks and blotches of light brown on a greenish ground, the other with a more cloudy effect. Two other sets are almost exactly like some of the Savanna, thickly dotted with fine brown spots so as to hide the ground color; the fifth bears a striking resemblance to some eggs I have seen of the Bobolink, being clouded and washed with dull brown on a dirty greenish white ground, while in the sixth set, 3 eggs are almost exactly like the ordinary type of the Prairie Horned Lark, with the buffy tint of the latter replaced by greenish, and the ground color being sparingly dotted with light brown; the other egg in this set resembling a light colored Savanna's, thickly dotted with brown spots, so as to nearly hide the ground color. I had no time to take a description of the seventh nest, which was taken by Col. Gourdeau, Deputy Minister of Marine and Fisheries, to the Museum of his Department at Ottawa.

Mr. James Boutilier, who seemed to know where nearly every pair nested annually, assured me that pure white eggs were seen in the nests occasionally, perhaps one egg in two years.

UNUSUAL ABUNDANCE OF THE SNOWY OWL (*NYCTEA NYCTEA*) IN NEW ENGLAND AND CANADA.

BY RUTHVEN DEANE.

UNDER a somewhat similar title I published a short article in the 'Bulletin' of the Nuttall Ornithological Club¹ in January, 1877. For two months prior to that date there had been a large migration of these owls through various parts of New England, though largely restricted to the seacoast. I have received information from different localities that another large incursion of Snowy Owls appeared this past winter, though the migration commenced considerably earlier than usual, the first being seen in October. While these owls are not regarded as rare visitors to

¹ Bulletin Nuttall Ornithological Club, Vol. II, No. 1, 1877.

the New England coast and along the shores of some of the Great Lakes, they have this season been found in greater numbers than usual some distance back in the interior.

These large flights seem to occur at intervals of every ten to fifteen years. About ten years previous to my records of 1876 there was a large New England flight, and many correspondents advise me that an unusual number were seen and shot in the winter of 1892-93.

As to the causes which influence these large and erratic migrations various opinions are expressed. Some observers attribute it to a scarcity of their accustomed food, others believe they follow in the wake of an unusual abundance of the regular migratory species on which they prey.

I have corresponded quite extensively with many observers and I gladly take this occasion to express my thanks to all for their courteous replies and interesting information, and take pleasure in quoting from their letters.

NEWFOUNDLAND.

Judge Prowse of St. Johns, Newfoundland, writes under date of March 25, 1902: "The Snowy Owl is a constant visitor in winter, but not very numerous about this part of the island. On the northeast coast, near the Straits of Belle Isle, they have been very numerous this winter; a great many have been shot and the fishermen have been living on them."

NOVA SCOTIA.

Mr. Harry Piers of Halifax, N. S., advises me under date of March 21, 1902, that the Snowy Owls had not been reported as abundant around Halifax, and he had known of only about ten specimens having been received by the taxidermists.

NEW BRUNSWICK.

Mr. George Y. Dalzell, keeper of the Swallowtail Light Station at Grand Manan, N. B., writes me under date of February 22,

1902: "Since receiving your letter about the Snowy Owls I have made enquiry concerning their movements on the island, and find there have been fourteen killed here since the middle of December. Mr. John Moses, the taxidermist, informs me that they were late in coming this year, and that their stay was longer than in former years. They frequent the Three Islands, the Two Islands, and the Duck Islands, small islands to the south of Grand Manan. They live on sea gulls, ducks, rabbits, mice and partridges, as portions and feathers of the above were found in them. I know they eat rabbits as I lost two myself."

Mr. Turner Ingalls, Jr., keeper Southwest Harbor Light Station, Grand Manan, N. B., writes under the date of February 12, 1902: "I first noticed the Snowy Owls on January 4 after a heavy northerly gale, and they remained until about the middle of the present month. I have seen eight or ten of the owls, though only three have been killed."

MAINE.

Mr. Lewis M. Todd of Calais, Me., writing under date of February 23, 1902, states that the local taxidermist has had six or seven Snowy Owls sent to him for mounting, and that six more had been observed in a radius of some twenty miles.

Mr. Homer R. Dill, State taxidermist at Gardiner, Me., reports nineteen specimens of the Snowy Owl received up to February 18, 1902.

Mr. Manly Hardy of Brewer, Me., reports, under date of February 17, 1902, that a good many Snowy Owls have been shot and seen over quite an extent of country, one being seen some thirty miles north of Brewer. He also reports three other specimens which were shot at Biddeford Pool, Me.

Capt. H. L. Spinney, Popham Beach, Me., writes me under date of February 22, 1902, that while he had handled but three specimens himself he had learned of between thirty or forty which had been taken in the State. He speaks of the late date of their arrival on the coast of Sagadahoc County, as they were first observed about the middle of January, and his records of the past fifteen years show that they usually arrive early in November and are seldom seen after the first of December. He also states that the flight

this winter extended further back from the coast than former records would show. Regarding their food, Capt. Spinney writes that they feed largely on small rodents. In November, 1897, one killed and ate one of his live decoy ducks, which at that time was close to the house.

Mr. John A. Lord, taxidermist at Portland, Me., writing under date of February 14, 1902, informs me that he had received thirty specimens between November 21, 1901, and February 5, 1902, and knew of about ten others being killed in the vicinity. Examinations of the stomachs showed about seventy-five per cent to be empty. Others contained mice, moles and shrews.

Mr. Leander White, keeper of the Cape Elizabeth Light Station, Me., reports, under date of February 27, 1902, that several of these owls had been killed in his neighborhood, the first being seen about the 27th of January, 1902.

Mr. J. Merton Swain writes under date of February 18, 1902, from Waterville, Me., that a great many Snowy Owls had been seen and the larger part were reported from the interior; that eight had been seen in Waterville and Fairfield. Mr. Swain states they were first seen about the middle of January, though Mrs. H. B. Bates, of Waterville, Me., sends me a record of a specimen that was shot there on January 2, 1902.

Prof. Leslie A. Lee of Brunswick, Me., writing under date of February 26, 1902, informs me that Mr. John Thompson, the local taxidermist, had reported the killing of five specimens within a few days of February 1, and another was also taken at North Anson, Me. on February 21, 1902.

Mr. Arthur H. Norton of Westbrook, Me., in writing under date of February 24, 1902, and in referring to a few specimens which came to hand, states that two adults shot at Westbrook were extremely fat but their stomachs were entirely empty. One bird weighed four and a half pounds, the other one ounce less; and that a large dark female shot on January 31, 1902, also very fat, contained two *Microtus pennsylvanicus*, swallowed whole; a very light colored male, shot at Gorham, Me., on February 7, was extremely fat. This owl had only a small quantity of mouse hair in its stomach.

Mr. Frederick A. Shaw of Portland, Me., under date of Feb-

ruary 26; 1902, informs me that about fifty specimens were taken in the immediate vicinity of the city, and that they were first observed about December 10, 1901.

Mr. Everett E. Johnston of Lewiston, Me., reports, under date of March 3, 1902, that a few Snowy Owls were shot in his locality in January and February, one of which was feeding on the carcass of a dead horse at the time it was killed.

Mr. F. W. Stanley, keeper of the Duck Island Light Station, McKinley, Me., reports four specimens seen on the island about January 1, 1902.

MASSACHUSETTS.

Mr. M. Abbott Frazar of Boston, Mass., in writing under date of February 19, 1902, advises me that the flight of Snowy Owls was very much later than in former years, and that while he had not kept any records this season, the proportion of birds was not as great as in the recorded migrations of 1876 and 1892.

Mr. Owen Durfee of Fall River, Mass., writes under date of February 18, 1902, that the Snowy Owls were not nearly as abundant as in the winter of 1890-91; the capture of about a dozen birds, at various localities on the Rhode Island coast, had come to his notice, and that he had records of three which were taken on the south shore of Martha's Vineyard. Contrary to the observations of Maine ornithologists, Mr. Durfee states that this season all records have been made on the coast, while in 1890 they worked up the Seaconnet River and tributaries of Mount Hope Bay to a much larger extent. One large, heavily barred specimen, shot at Little Compton, R. I., on February 14, was reported by the local taxidermist to be very fat and the stomach full of rats.

Mr. John E. Thayer, of Lancaster, Mass., in writing me under date of February 17, 1902, says: "I have not heard of any unusual migration of the Snowy Owl in Worcester County. I think in Maine there has been a great many this season, and I am receiving frequent letters offering live specimens, especially from Wells Beach, Me. They were reported to have been caught in traps."

RHODE ISLAND.

Mr. Harry A. Cash, of Providence, R. I., writes me under date of February 20, 1902, that of the eighteen specimens sent to him for mounting, the first was received on January 7, 1902, and the last on February 10, 1902. Eleven were males and seven were females. These specimens were all taken on the Rhode Island coast, with the exception of two, these being collected at Mystic, Conn., and Nantucket. The stomachs of eleven were empty, the balance bearing evidence of dark flesh, probably of ducks and rats; in one stomach was an entire rat, two-thirds grown. One female was shot on January 21, 1902, at Pawtucket, R. I., from a duck shooter's stand, while pursuing a flock of ducks, and was killed over the decoys.

Mr. Simon Dodge, keeper Southeast Light Station, Block Island, R. I., writes under date of March 4, 1902, that he had seen three specimens of the Snowy Owl, which had been killed on the island between January 25 and February 15.

CONNECTICUT.

Mr. James H. Hill, New London, Ct., writes the following most interesting letter, under date of March 18, 1902: "Munnatawket or Fisher's Island, Suffolk Co., New York, lying at the east end of Long Island Sound, near the Connecticut shore, has had during the past months of December, January and February, one of the most noteworthy flights of Snowy Owls, no less than eighteen of these arctic visitors having been seen and fifteen captured, three alive and unhurt. Two of these lend an added interest to the Bronx Park collection of Raptores, the third cut with his sharp bill the 'gordian knot' and the twine that held him captive, and regained his liberty. The writer has been secretary of the Fisher's Island Sportsman's Club for over fifteen years, and during that period a few have been seen and captured, but never before have they been so numerous and in such fine plumage. The island seems to be particularly attractive to these snowy visitors, due no doubt to the fact that the Fisher's Island preserves are well stocked with game — pheasants, quail, English and Belgian hares, the hares,

especially the Belgians, being very numerous and easily captured; and the owls seem to take very kindly to this bill of fare, as a full grown *Nyctea*, when hungry, makes short work of the best portion of his hareship. In fact, so surfeited do the owls get at times, that I have three records of their having been run down and captured alive. Other *Raptores* have suffered a similar fate, notably a fine Bald Eagle and a Golden Eagle, both captured on the island. The owls seldom annoy the feathered game."

Mr. John N. Clark of Saybrook, Conn., writes me under date of March 2, 1902, that there had evidently been a large flight of Snowy Owls again in New England. He states that two were brought to him one day, and a third specimen was shot the same day, all within a distance of ten miles on the Sound shore.

NEW JERSEY.

Mr. Turner Green, taxidermist, Jersey City, N. J., under date of April 3, 1902, informs me that a Snowy Owl was shot at Caven Point, N. Y., on January 1, 1902, after a severe storm. The stomach contained a short-tailed mouse. He also states that another specimen was seen about the same date at Bayonne, N. J. Careful enquiry among various sportsmen did not bring out any further records.

NEW YORK.

Miss M. R. Audubon of Salem, N. Y., in writing under date of March 3, 1902, states that a Mr. Roberson had seen a number of Snowy Owls across the mountains which divide Salem from Camden Valley and Dorset. One individual was feeding on some rodent, probably a muskrat, as one had been torn from one of his nearby traps.

Mr. Thos. W. Fraine, taxidermist, Rochester, N. Y., in writing under date of March 24, 1902, states that while during the flight of Snowy Owls which invaded the country in 1876, he received over forty specimens, during the past winter only two had been brought to him. The specimens which he examined in 1876, and which were captured along the shore of Lake Ontario, had been feeding largely on fish.

Mr. Elon Howard Eaton, Canandaigua, N. Y., writing under date of March 6, 1902, states that there has been no unusual flight of Snowy Owls in his locality. He states that the collectors and taxidermists report that they have received several, although not as many as in average years. One collector reported four, taken on the shore of Lake Ontario, and states that they were all collected about the 18th of November, the first heavy snow storm of the season coming at that time.

Mr. Wm. S. Johnson, Booneville, N. Y., writing under date of March 19, 1902, informs me as follows: "Snowy Owls appeared in this locality the latter part of December, the last one being seen the last week in February. During this time about twenty, to my knowledge, were observed; fifteen of this number were shot, ten of which were mounted by our local taxidermist. Of these ten only three were females. The stomach contents of five of them were sent to the U. S. Dept. of Agriculture, and were found to contain the remains of the common meadow mouse (*Microtus pennsylvanicus*), one stomach containing the remains of six."

Mr. Thomas Rowland, taxidermist, New York City, under date of March 5, advises me that he had eight Snowy Owls sent to him, which were killed on Long Island, the first specimen being received January 10, 1902. He also states that he received several more of these owls from Canada.

PROVINCE OF QUEBEC.

Sir James M. Le Moine of Quebec, writes me under date of February 19, 1902, that one specimen of the Snowy Owl was observed on his grounds, 'Spencer Grange,' which was very unusual, and that he had received a reliable account of six, which were seen and some of them captured at Compton, P. Q., about fifteen miles north of the Vermont border.

Mr. C. E. Dionne of Quebec, in writing under date of February 27, 1902, informs me that he has seen eleven Snowy Owls this winter, which were shot at or in the neighborhood of the city of Quebec. Out of four which he prepared, the stomachs of three were empty; the fourth contained a red-backed mouse and

a white-footed mouse. He reports that an owl of this species which he examined about eight years ago, shot on the St. Lawrence River, below Quebec, contained a specimen of the Black Guillemot entire, with the exception of the wings and one foot.

Mr. Napoleon A. Comeau, Godbout, P. Q., writes the following most interesting letter under date of March 11, 1902: "Migrations of the Snowy Owl occur almost every year along the north shore of the St. Lawrence River. As the birds alight on floating ice as well as on land, many of them find their way across the St. Lawrence and from there to Maine, or follow the river up, and some are killed near Quebec, and even in the city, according to reports in the local papers. An abundant food supply seems to be the cause. They generally follow in the track of migration of other birds on which they prey. These are Willow Ptarmigan, the Lesser Auk, and the Murre (*Uria lomvia*). The big migration of 1876, which you noticed, followed a very large migration of Ptarmigans. During the present winter they have followed on an immense migration of the Lesser Auk and Murre. Some three hundred or so Snowy Owls have been shot and trapped by residents in this immediate vicinity in a section of about nine miles. I have examined the stomachs of over a hundred, and have found invariably the remains of the two species above mentioned. The owls in some cases were nothing but a lump of fat. The migration began here on November 25, 1901, when the first was seen, and has continued at intervals to this date. The last birds are seen generally about the beginning of May, when they disappear entirely. This bird flies and preys by day as well as by night, but the greatest flights are by night. They follow the coast line, as a rule. In January of this year I saw over a hundred birds in one evening from seven o'clock to 10.30 P. M. They are rather shy birds and difficult to shoot, owing to their keen sight and habit of selecting some high point to alight upon, such as a large piece of ice or a rock. They seldom alight on green trees, but select dead stumps. Trappers take advantage of this habit and place steel-traps on stumps or other prominent places to which the owls fall an easy prey. They are considered a good article of food in this region, and the feathers also yield a profit. The Murre, not being a shy bird, is easily

captured by the owls; they are generally caught when sitting on pieces of ice or along the rocks, as is their habit. The flight of the Snowy Owl, like that of all the members of this family, is perfectly noiseless, and its color helps it to approach its prey unawares."

ONTARIO.

Dr. C. K. Clarke of Kingston, Ont., writes me under date of February 18: "The migration of Snowy Owls has extended, as far as I can learn, all over Ontario. In Kingston, sixteen have been killed, to my knowledge."

Dr. G. C. Tremains Ward of Napanee, Ont., twenty-six miles west of Kingston, writes me under date of February 18, 1902, that Snowy Owls this year are probably as abundant as in any previous year, though he had only observed three himself. He referred to one specimen which seemed to be 'located,' as he had seen it several times, and always in the same clump of cedars.

The Rev. J. C. Young of Sharbot Lake, Ont., situated some sixty miles north of Lake Ontario, in writing under date of February 26, 1902, states that there has been quite a migration of Snowy Owls throughout eastern Ontario. Four specimens had been taken in his immediate vicinity during January and February, and a large number had been seen and shot in the County of Renfrew, about fifty miles further north. He further states that this species is usually quite rare in his locality, some years none being seen, but that this season the migration was the largest known in that section.

Mr. George R. White of Ottawa, Ont., writes under date of March 4, 1902: "During the months of January and February of this year there has been a large number of Snowy Owls brought into this city, both alive and dead. I observed five alive in one window. Our local taxidermist has had over eighty specimens sent in to be mounted, and he refused to purchase a number that were offered to him."

Mr. James H. Fleming of Toronto, Ont., sends the following interesting information, under date of March 3, 1902: "The flight of Snowy Owls seems to have been first noticed in southern

Ontario about the 20th of December, 1901. Nearly all my correspondents give the 25th as the date when their abundance was first noticeable. From then on to about the 15th of January, 1902, the owls were spread over the southwestern portion of the Province in sufficient numbers to attract attention. In Toronto the number killed was not less than sixty, and about the same number were accounted for by my correspondents elsewhere. The number killed in Ontario must have greatly exceeded this estimate. All the birds taken during the early part of the flight that I examined were males, and it was not until well on in January that females were at all abundant. The east shore of Lake Huron, from Bruce Peninsula to Sarnia, at the mouth of the St. Clair River, was visited by Snowy Owls in considerable numbers, and they spread through the counties of Middlesex, Oxford and Wellington; the Georgian Bay seems to have been visited only by stragglers. None were reported from Owen Sound. All the country surrounding Lake Simcoe was visited by these owls in more than usual numbers. The birds do not seem to have occurred in the districts of Muskoka and Parry Sound, except casually. I have only one record. They appear to have avoided the wooded country, preferring the older settled country along the Great Lakes. I have no information about the north shore of Lake Erie, and very little from east of Toronto, but a line drawn through Ontario from Orillia to Toronto, almost due south, would mark the eastern limit of their abundance during the flight, which may have extended along the north shore of Lake Ontario to Kingston, but my information is not sufficient to be certain. I did not pay particular attention to the food question. The birds were all in good condition, and outside of Toronto a good many were either shot or trapped while feeding on dead horses or cattle. About Toronto wounded ducks were probably picked up, the Toronto Marsh abounds in field mice, and much fish offal and carrion would be available. Part of the flight has remained in Ontario for the rest of the winter, but the main body passed further to the south or southeast."

Mr. William Holliday of Guelph, Ont., forty-eight miles west of Toronto, writes me under date of March 7, 1902:

"Judging from the number of Snowy Owls I have mounted

this winter, there must have been a very large migration through this section. I have received eighteen specimens between December 19, 1901, and March 7, 1902. One of the number was sent from Winnipeg, December 27, 1901, the sender reporting them abundant in Manitoba. I have been engaged in taxidermy here for ten years, and during that time have not received a single specimen before. Four fifths of the number were females. The stomachs of those which I examined contained the remains of mice and red squirrels."

Mr. Robert Elliott of Bryanston, Ont., under date of March 4, 1902, writes me that the first Snowy Owl appeared about January 22, 1902, the weather being clear and cold at the time. The specimen remained on a grass farm until February 15, frequently perching on the barn for an hour at a time. A few other specimens were seen in January and February. Mr. Elliott also states that a Mr. Owens, taxidermist, living near Mooresville, Middlesex County, received and mounted twenty-two specimens during the winter, and commented on the fact that thirteen years ago he prepared exactly the same number, not having handled a single specimen in the interim. Mr. Elliott says that he is not aware that any of the stomachs were examined for food, but that the first specimen he saw spent three weeks near the carcass of a dead horse in the woods. He also states that the past winter has been remarkable for the number and variety of birds observed.

Mr. William E. Saunders of London, Ont., writes me under date of February 22, 1902, that there has been an extraordinary number of Snowy Owls in western Ontario this season, but their distribution seems to be quite local. At London none were seen. At Rondeau, where there is an extensive marsh on the lake shore, southwest of London, several have been taken, and they are not uncommon there every winter. At Watford, forty miles west of London, three were taken, while twenty miles north, in Biddulph township, a taxidermist was said, on good authority, to have received twenty specimens.

MICHIGAN.

Mr. W. H. Kress of Elk Rapids, Michigan, writes under date of April 11, 1902, that he had received and mounted during the

winter, twenty-eight specimens of the Snowy Owl, and enclosed a most artistic picture of fourteen of these striking birds. He states that they first appeared late in November, 1901, and that they had almost completely destroyed the quail and partridges in that section; the quail having been quite abundant before the inroad of the owls. One specimen, seen flying close to the ground, suddenly stooped and captured a rabbit. Mr. Kress informs me that at least fifty specimens were killed in the vicinity of Elk Rapids.

GENERAL NOTES.

The American and European Herring Gulls.—In 1862, the late Dr. Coues separated the American Herring Gull as specifically distinct from the European Herring Gull, under the name *Larus smithsonianus*, on the basis of slight differences in general size, and in the size and form of the bill, but mainly on the small amount of white at the tips of the primaries. Later an attempt was made to show that these alleged differences were due to age (*cf.* Allen, Bull. Mus. Comp. Zool., II, pp. 194–196, April, 1871). As, however, Herring Gulls unquestionably referable to the Old World form have proved to be of more or less frequent occurrence in this country, together with many intermediates, both forms of the Herring Gull have been given a place in the A. O. U. Check-List, standing, respectively, as *Larus argentatus* and *Larus argentatus smithsonianus*. I have, however, never been convinced that my exposition of the case in 1871 was not thoroughly sound.

Although *Larus smithsonianus*, either as a species or subspecies, appears to have never received any recognition abroad, it was not again challenged by American writers till 1898 and later, when Mr. O. W. Knight, after examination of a great number of adult American Herring Gulls shot at Portland, Maine, emphatically claimed the “non-existence of the so-called subspecies *L. a. smithsonianus*” (*cf.* Auk, XVII, Jan. 1900, pp. 63, 64). A year later Dr. Dwight, on wholly different material, reached practically the same conclusion in his paper on ‘The Sequence of Moults and Plumages of the Laridæ’ (Auk, XVIII, Jan. 1901, pp. 49–62). In referring to the white areas at the tip of the first primary in the American Herring Gull, and to the wide range of variation in these markings, which vary from two small distinct white areas to a single large apical white spot, he asks “Is the European bird always marked by one white area?” Owing to the absence of large series of European specimens in